

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

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1. (Currently Amended) ~~A push-type information transmission method in an~~ In a communication network ~~including comprising~~ an information provider server device, a plurality of user terminals ~~for receiving information provided by said server device~~, and a transfer device for routing information transmission between said information provider server device and said user ~~terminal~~ terminals; a push-type information transmission method wherein said transfer device comprises comprising:

registering a user terminal with the information provider server;

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~~a step of receiving, at the transfer device, information mail supplied with a network address of for the~~ a user terminal ~~designated as a desired destination from said~~ information provider server device;

~~a step of storing, at the transfer device, said information mail;~~

~~a step of calling the user terminal whose network address has been designated; and~~

~~a step of transmitting from the transfer device the stored information mail in response to a request from said called user terminal.~~

2. (Currently Amended) A push-type information transmission method as in claim 1, wherein registering said user terminal with the information provider server comprises ~~a step of pre-accessing said server device and registering its own a network address of the user terminal~~ with said information provider server device as a registration procedure for receiving an information transmission service offered by said information provider server device, and

wherein said information provider server device provides information to user terminals which have completed said registration.

3. (Currently Amended) ~~A push-type information transmission method in an~~ In a communication network ~~including comprising~~ an information provider server device, a

plurality of user terminals ~~for receiving information provided by said server device~~, and a transfer device for routing information transmission between said information provider server device and said user terminal terminals; a push-type information transmission method performed ~~wherein said by said transfer device comprises comprising~~:

~~a step of pre-storing~~ storing identification information relating to user terminals which are to receive an information providing service offered by said information provider server device;

modifying the identification information relating to the user terminals;

sending the modified identification information to the information provider server;

~~a step of receiving information for transmission and a user terminal identifier mail~~ supplied from said information provider server device;

~~a step of storing said information for transmission mail;~~

~~a step of calling a relevant user terminal based on the pre-stored~~ stored identification information relating to user terminals, the modified identification information, and the user terminal identifier which are to receive an information providing service; and

~~a step of transmitting the stored information for transmission mail~~ in response to a request from the called user terminal.

4. (Currently Amended) A push-type information transmission method as in claim 3, further comprising registering a network addresses of the user terminals with the transfer device,

wherein storing identification information comprises storing the network addresses of the user terminal;

wherein modifying the identification information comprises assigning user management numbers to the network addresses; and

wherein sending the modified identification information to the information provider server comprises sending the user management numbers to the information provider server

~~said user terminal comprises a step of pre-accessing said server device and registering its own network address with said server device as a registration procedure for receiving an information transmission service offered by said server device; and~~

~~due to this step, information relating to the user terminals which are to receive~~

information providing services offered by said server device is pre-stored.

5. (Currently Amended) ~~A push-type information transmission method in an~~ In a communication network ~~including comprising~~ an information provider server device, a plurality of user terminals ~~for receiving information provided by said server device~~, and a transfer device for routing information transmission between said information provider server device and said user ~~terminal terminals~~; a push-type information transmission method performed wherein said by said transfer device comprises comprising:

~~a step of storing user attribute data of each users and network addresses of the user terminals in correspondence;~~

~~a step of receiving information mail supplied from said information provider server device together with attribute information of users designated as desired destinations;~~

~~a step of storing said received information mail;~~

~~a step of comparing said stored user attribute data and the designated user attribute data, and specifying network addresses of user terminals corresponding to users having the designated attributes;~~

~~a step of calling the specified user terminals; and~~

~~a step of sending the stored information mail in response to a requests from said called user terminals.~~

6. (Currently Amended) A push-type information transmission method as in claim 5, wherein said user terminal comprises a step of pre-accessing said information provider server device and registering its own network ~~an~~ address with said information provider server device as a registration procedure for receiving an information transmission service offered by said information provider server device, and

said transfer device calls user terminals which have completed said registration.

7. (Currently Amended) A push-type information transmission method as in any one of claims 1-6, wherein said information provider server device belongs to a first communication network which follows a first communication protocol, said plurality of user terminals belong to a second communication network which follows a second communication protocol

different from said first communication protocol; and

said transfer device is a gateway for converting between said first and second communication protocols and routing the exchange of said information-mail.

8. (Original) A push-type information transmission method as in claim 7, wherein said plurality of user terminals are given first network addresses used only on said first communication network and are discriminated on said first communication network by second network addresses which have a one-to-one correspondence with said first network addresses in said second communication network; and

said transfer device converts between said second network addresses in said first communication network and said first network addresses in said second communication network.

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9. (Currently Amended) A push-type information transmission method as in claim 8, wherein said second communication network is a local network accommodating specific user terminals; and

said first communication network is a global network interconnecting information resources such as said information provider server device to which are allotted identification information for identifying an absolute address in the network.

10. (Original) A push-type information transmission method as in claim 9, wherein said second communication network is a mobile communication network accommodating a plurality of user terminals which are mobile stations; and

said first communication network is the Internet.

11. (Currently Amended) A transfer device for routing information transmissions between an information provider server device and a plurality of user terminals for receiving the information provided by said information provider server device, comprising:

registering means for registering a user terminal with the information provider server;

receiving means for receiving information mail-supplied from said information provider server device together with a network address of for a user terminal designated as a

~~desired destination;~~

~~storage means for storing the received information-mail;~~

~~calling means for calling the user terminal-whose network address has been designated; and~~

~~sending means for sending the stored information mail-in response to a requests from said called user terminal.~~

12. (Currently Amended) A transfer device for routing information transmissions between an information provider server ~~device~~ and a plurality of user terminals for receiving the information provided by said information provider server-device, comprising:

memory for pre-recording identification information relating to a user terminal which is to receive an information providing service offered by said information provider sever device;

modification means for modifying the identification information relating to the user terminals;

sending means for sending the modified identification information to the information provider server;

receiving means for receiving information for transmission and a user terminal identifier mail-supplied from said information provider server device;

storage means for storing the received information-mail;

calling means for calling relevant user terminals based on the identification information relating to the pre-recorded user terminal, the modified identification information, and the user terminal identifier ~~which are to receive an information providing service~~; and

sending means for sending said stored information mail-in response to a requests from said called user terminal.

13. (Currently Amended) A transfer device for routing information transmissions between an information provider server ~~device~~ and a plurality of user terminals for receiving the information provided by said information provider server-device, ~~by~~ comprising:

memory for recording user attribute information and a network address of the user

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terminal in correspondence with each other with respect to ~~each~~ users;

receiving means for receiving from said information provider server device information ~~mail~~-supplied together with attribute information of ~~a~~ users designated as a desired destinations;

storage means for storing the received information ~~mail~~;

specifying means for comparing the recorded user attribute information with the designated user attribute information, and specifying network addresses of user terminals which correspond to users having the designated attributes;

calling means for calling the specified user terminals; and

sending means for sending said stored information ~~mail~~ in response to requests from the called user terminals.

14. (Currently Amended) A transfer device as in any one of claims 11-13, wherein said information provider server device belongs to a first communication network which follows a first communication protocol, and said plurality of user terminals belong to a second communication network which follows a second communication protocol different from that of said first communication network; and

further comprising protocol converter for converting between said first and second protocols.

15. (Currently Amended) A transfer device as in claim 14, wherein said plurality of user terminals are given first network addresses used only on said second communication network and are discriminated on said first information transmission network by second network addresses which have a one-to-one correspondence with said first network addresses in said second communication network; and

further comprising address converter for converting between said second network addresses in said first communication network and said first network addresses in said second communication network.

16. (Currently Amended) A transfer device as in claim 15, wherein said second communication network is a local network accommodating specific user terminals; and

said first communication network is a global network interconnecting information resources such as said information provider server device to which are allotted identification information for identifying an absolute address in the network.

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17. (Original) A transfer device as in claim 16, wherein said second communication network is a mobile communication network accommodating a plurality of user terminals which are mobile stations; and
said first communication network is the Internet.

18. (New) A push-type information transmission method as in claim 1, wherein registering the user terminal with the information provider server comprises registering by the transfer device an address of the user terminal.

19. (New) A push-type information transmission method as in claim 18, further comprising:

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- registering a network address of the user terminal with the transfer device;
- storing in a database of the transfer device the network address of the user terminal and a user management number, the user management number being correlated to the network address of the user terminal; and
- wherein registering by the transfer device an address of the user terminal comprises registering the user management number.

20. (New) A push-type information transmission method as in claim 19, wherein receiving information for the user terminal comprises receiving information and the user management number;

further comprising determining the network address for the user terminal by searching the database with the user management number to determine the correlated network address; and

wherein calling the user terminal comprises calling the user terminal at the correlated network address.

21. (New) A push-type information transmission method as in claim 1, wherein receiving information for the user terminal further comprises receiving a mailbox address; and wherein storing said information comprises storing said information at the mailbox address in the transfer device.

22. (New) A push-type information transmission method as in claim 2, wherein receiving information for the user terminal comprises receiving information and the network address; wherein the request from said called user terminal comprises a telephone number of the user terminal;

further comprising comparing the telephone number in the request with the network address; and

wherein transmitting the stored information comprises transmitting the stored information if at least a part of network address matches the telephone number in the request.

23. (New) A push-type information transmission method as in claim 19, wherein the request from said called user terminal comprises a telephone number of the user terminal;

further comprising comparing the telephone number in the request with a telephone number correlated to the user management number received from the information provider; and

wherein transmitting the stored information comprises transmitting the stored information if at least a part of telephone number correlated to the user management number received from the information provider matches the telephone number in the request.

24. (New) In a communication network comprising a plurality of information provider servers, a plurality of user terminals, and a transfer device for routing information transmission between said information provider servers and said user terminals, a push-type information transmission method performed by said transfer device comprising:

receiving, from an information provider server, push-type information for transmitting to at least one user terminal;

determining whether the information provider server is registered with the transfer device; and

rejecting the push-type information if the information provider is not registered with the transfer device.

25. (New) A push-type information transmission method as in claim 24, wherein rejecting the push-type information comprises disposing of the push-type information.

26. (New) A push-type information transmission method as in claim 24, wherein the transfer device receives a network address of the information provider server; and wherein determining whether the information provider server is registered with the transfer device comprises comparing the network address of the information provider server with a list of network addresses of registered information provider servers.

27. (New) A push-type information transmission method as in claim 26, further comprising registering, by the information provider server, the network address for the information provider server in the list of network addresses, wherein registering is performed prior to receiving the push-type information.

28. (New) A push-type information transmission method as in claim 26, further comprising storing the push-type information if the information provider server is registered.

29. (New) A push-type information transmission method as in claim 26, further comprising determining at least one user terminal to transmit the push-type information if the information provider server is registered with the transfer device.

30. (New) A push-type information transmission method as in claim 29, further comprising:

calling the user terminal;

receiving a request from the user terminal to send the information; and

sending the information to the user terminal after receiving the request.

31. (New) A push-type information transmission method as in claim 24, wherein

receiving push-type information further comprises receiving information for identifying at least one user terminal.

32. (New) A push-type information transmission method as in claim 31, further comprising registering the user terminals; and
wherein determining at least one user terminal is based on the information for identifying at least one user terminal and the registration of the user terminals.

33. (New) A push-type information transmission method as in claim 32, wherein the information for identifying at least one terminal comprises a user management number;
wherein registering the user terminals comprises registering a network addresses of the user terminals; and
wherein determining at least one user terminal comprises selecting a network address from a list of registered addresses based on the user management number.

34. (New) A push-type information transmission method as in claim 32, wherein registering the user terminals comprises registering attributes of users of the user terminals;
wherein the information for identifying at least one terminal comprises attribute information of users designated as desired destinations; and
wherein determining at least one terminal comprises comparing the registered attributes of users with the designated user attribute information, and specifying user terminals which correspond to users having the designated attributes.

35. (New) A push-type information transmission method as in claim 34, wherein registering the user terminals further comprises registering telephone numbers of the user terminals, a telephone number of a specific user terminal being correlated to attributes of a user of the specific user terminal; and
wherein specifying user terminals comprises specifying telephone numbers of user terminals which correspond to users having the designated attributes.

36. (New) In a communication network comprising a plurality of information provider

servers, a plurality of user terminals, and a transfer device for routing information transmission between said information provider servers and said user terminals, a push-type information transmission method comprising:

registering the user terminals with the transfer device and the information provider server;

registering the information provider servers with the transfer device;

receiving push-type information at the transfer device from an information provider server; and

determining, by the transfer device, which user terminals to send the push-type information based on the registration of the user terminals and the information provider servers.

37. (New) A push-type information transmission method as in claim 36, wherein determining which user terminals to send the push-type information comprises determining whether the information provider, from which the push-type information is received, is registered with the transfer device.

38. (New) A push-type information transmission method as in claim 37, wherein determining which user terminals to send the push-type information further comprises determining that no user terminals are sent the push-type information if the information provider server is not registered with the transfer device.

39. (New) A push-type information transmission method as in claim 36, wherein registering the user terminals comprises registering network addresses of the user terminals; wherein receiving push-type information further comprises receiving at least one user management number, the user management number for designating at least one user terminal and is other than the registered network addresses of the user terminals; wherein determining which user terminals to send the push-type information comprises selecting a network address from a list of registered addresses based on the user management number.

40. (New) A push-type information transmission method as in claim 36, wherein registering the user terminals comprises registering attributes of users of the user terminals; wherein receiving push-type information further comprises receiving attribute information of users designated as desired destinations; and wherein determining which user terminals to send the push-type information comprises comparing the registered attributes of users with the designated user attribute information, and specifying user terminals which correspond to users having the designated attributes.

41. (New) A push-type information transmission method as in claim 36, further comprising calling the determined user terminals; and transmitting from the transfer device the push-type information in response to requests from said called user terminals.

42. (New) In a communication network comprising an information provider server, a plurality of user terminals, and a transfer device for routing information transmission between said information provider server and said user terminals, a push-type information transmission method performed by said transfer device comprising:
storing user terminal information;
receiving, from the information provider server, transmitted information and a user terminal identifier for identifying at least one of the user terminals, wherein the user terminal identifier is other than a network address of a user terminal;
storing the transmitted information;
determining at least one user terminal to send the transmitted information based on the user terminal identifier and the user terminal information; and
sending the transmitted information to the determined user terminal.

43. (New) A push-type information transmission method as in claim 42, further comprising:
calling the user terminal to request whether to transfer the information; and
receiving a request from the user terminal to transfer the information,

wherein sending the transmitted information comprises sending the transmitted information in response to the request from the called user terminal.

44. (New) A push-type information transmission method as in claim 42, wherein storing user terminal information comprises registering the user terminals with the transfer device.

45. (New) A push-type information transmission method as in claim 44, wherein registering the user terminals comprises storing, for a specific user terminal, attributes of a user of the specific user terminal and a network address of the specific user terminal with the transfer device.

46. (New) A push-type information transmission method as in claim 42, further comprising registering the user terminals with the information provider server.

47. (New) A push-type information transmission method as in claim 46, wherein registering the user terminals with the information provider server comprises:
receiving from the user terminal a network address of the user terminal;
creating the user terminal identifier based on the network address; and
sending the user terminal identifier to the information provider server.

48. (New) A push-type information transmission method as in claim 47, wherein the user terminal identifier is a user management number; and

wherein creating the user terminal identifier based on the network address comprises selecting the user management number and creating a one-to-one correspondence between the user management number and the network address for the user terminal.

49. (New) A push-type information transmission method as in claim 42, wherein the stored user terminal information comprises stored attribute data for users of the user terminals;

wherein the user terminal identifier comprises designated attributes; and
wherein determining at least one user terminal comprises:

comparing the designated attributes with stored attribute data; and
specifying network addresses of user terminals corresponding to users having
the designated attributes.

50. (New) A transfer device for routing information transmission from an information
provider server to a plurality of user terminals, the transfer device comprising:

programming code in said transfer device for:

receiving, from an information provider server, push-type information for
transmitting to at least one user terminal;

determining whether the information provider server is registered with the
transfer device; and

rejecting the push-type information if the information provider is not
registered with the transfer device.

51. (New) The transfer device of claim 50, wherein the programming code for rejecting
the push-type information comprises programming code for disposing of the push-type
information.

52. (New) The transfer device of claim 50, wherein the transfer device receives a network
address of the information provider server; and

wherein the programming code for determining whether the information provider
server is registered with the transfer device comprises programming code for comparing the
network address of the information provider server with a list of network addresses of
registered information provider servers.

53. (New) The transfer device of claim 52, further comprising programming code for
registering, by the information provider server, the network address for the information
provider server in the list of network addresses.

54. (New) The transfer device of claim 52, further comprising programming code for
storing the push-type information if the information provider server is registered.

55. (New) A transfer device for routing information from an information provider server to a plurality of user terminals, the transfer device comprising:

a database;

an information managing portion for storing registration information from the user terminals and the information provider server in the database and for determining which user terminal to transmit information to based on the stored registration information from the user terminals and the information provider server;

an electronic mail managing portion comprising at least one mailbox for storing the information to be transmitted; and

a bus for connecting the information managing portion and the electronic mail managing portion.

56. (New) The transfer device of claim 55, wherein the registration information for the user terminals stored in the database comprises telephone numbers of the user terminals and corresponding user management numbers; and

wherein the information managing portion receives user management numbers from the information provider server and converts the user management numbers into telephone numbers based on the database.

57. (New) The transfer device of claim 55, wherein the registration information for the user terminals stored in the database comprises attributes of users of the user terminals; and

wherein the information managing portion receives designated attributes from the information provider server and determines user terminals which have attributes in the database that match the designated attributes.

58. (New) The transfer device of claim 55, further comprising a system control portion for performing protocol conversion between a mobile packet communication network for the user terminals and an Internet for the information provider server.

59. (New) An information provider server in an Internet sending information to a plurality

of user terminals in a mobile telephone network via a transfer device, the information provider server comprising:

registration means for registering user management numbers of the user terminals with the information provider server, the user management numbers having a one-to-one correspondence with telephone numbers of the user terminals; and

providing means for providing information services to the user terminals in response to requests from registered user terminals.

60. (New) The information provider server of claim 59, wherein the registration means comprises receiving means for receiving the user management numbers from the transfer device.

61. (New) An information provider server in an Internet sending information to a plurality of user terminals in a mobile telephone network via a transfer device, the information provider server comprising:

identifying means for identifying a set of attributes with respect to users of the user terminals for purposes of providing information services; and

providing means for providing information to the user terminals by forwarding to the transfer device the information with the identified set of attributes so that the transfer device specifies addresses of the user terminals corresponding to users having the identified set of attributes.

62. (New) Mobile terminal device for receiving information from an information provider server via a transfer device, the mobile terminal device comprising:

requesting means for requesting registration of the user terminal at the transfer device and the information provider device, the registration at the transfer device comprising registering a telephone number of the user terminal and the registration at the information provider server comprising registering a user management number of the user terminal, the user management number having a one-to-one correspondence with the telephone number; and

receiving means for receiving information, the information provider server sending

the information and the user management number to the transfer device, the transfer device selecting the telephone number corresponding to the user management number and sending the information to the receiving means.

63. (New) Mobile terminal device for receiving information from an information provider server via a transfer device, the mobile terminal device comprising:

requesting means for requesting registration of the user terminal at the transfer device, the registration at the transfer device comprising registering attributes of a user of the user terminal and a telephone number of the user terminal; and

receiving means for receiving information, the information provider server sending the information and designated attributes to the transfer device, the transfer device sending the information to the receiving means if the designated attributes match at least some of the registered attributes.

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